

AMENDMENTS TO THE SPECIFICATION

Please amend the Specification as follows:

Please amend paragraph [0020] as follows:

[0020] FIGS. 1 and 2 are perspective and cross-sectional views showing one embodiment of a microfluidic device 100 that utilizes a gel membrane to control electrolysis. The device 100 includes a body 102 having a 3-level structure with an upper channel 104 and a lower channel 106 separated by a gel plug, layer or membrane 108. In use, the upper channel 104 is filled with buffer and analyte solution and the lower channel 106 is filled with an electrolyte solution separated by the gel membrane 108. Electrodes 110 and 111 are placed in contact with the solutions in the upper 104 and lower 106 channels, preferably at reservoirs 112 and 114. A potential is applied to the electrodes. By placing a ground electrode 111 in one of the reservoirs 112 of the upper channel 104, electro~~ns~~charged molecules in the lower channel 106 will pass through the gel membrane 108 into the upper channel 104, leaving behind any electrolysis products which are created at the electrode surface.